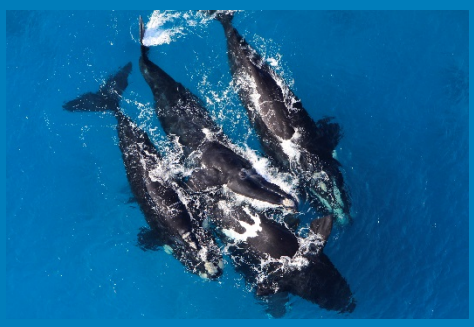
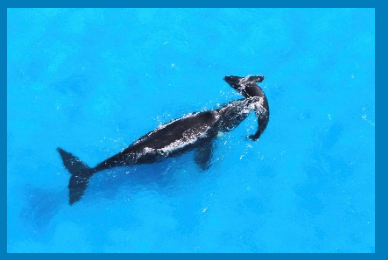
Marine Biodiversity Hub

National Environmental Science Programme

Project A7 -
Monitoring Population Dynamics of 'Western' Right Whales off Southern Australia 2015-2018

Project Leader: J L Bannister

Research Plan 1 – 2015
Progress Report to 30 December 2015

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Contents

EXECUTIVE SUMMARY

To continue an annual series of aerial surveys off the southern Australian coast between Cape Leeuwin WA and Ceduna SA since 1993, an aerial survey was undertaken as planned over six days, 2-6 September, 2015. For comparison with previous results, counts were obtained of 462 individuals including 97 calves of the year. From 3679 photographic images obtained, 377 have been selected for computer-assisted 'matching' with those (some 5000 images of some 2000 individuals) already available in the catalogue, and 126 data sightings sheets have been added to the sightings database, currently totalling 3670 sightings sheets.

Full details, including trend analysis since 1993 and current population size, will be included in the Final Report due on 30 March 2016

INTRODUCTION

Southern right whales were reduced almost to extinction by 19th Century whaling, throughout the southern hemisphere but including off Australia. There have been signs of recovery off the southern Australian coast, particularly off WA and western SA (the 'western subpopulation'), particularly since the mid-1970s, given cessation of whaling on the species. Since1976 aerial surveys have been undertaken annually to determine numbers and population trend and obtain individual identifying photographs, at first along the WA south coast from Cape Leeuwin east to Twilight Cove, but from 1993 extending into SA waters to as far as Ceduna, given evidence of intra- and inter-season coastal movement. Further east around the Australian coast there has been little sign of recovery in number; a working hypothesis assumes separation between two subpopulations – 'western' and 'eastern'. This report summarises the results so far of a planned aerial survey between Cape Leeuwin and Ceduna in August/September 2015. A final report is due in March 2016, although the assumption is that funding will be available for at least a further two annual flights, i.e. to 2017.

1. PROJECT SUMMARY

Aerial Survey, Cape Leeuwin-Ceduna and return, with an additional leg Augusta-Perth up the west coast, was undertaken successfully, as planned, between 2 and 9 September.

Extraction of count data was undertaken successfully, as planned, by 30 October. Preliminary analysis has been undertaken, but given the relatively low count in 2015, completed analysis will be included in the final report due on 30 March 2016.

2. BACKGROUND

See Introduction.

3. AIMS

a) continue collection of the dataset, i.e. counts and photographs, of southern right whales, from the southern coast between C Leeuwin WA and Ceduna SA, as in each year since 1993. Obtain estimates of population trend since 1993, and current population size.

b) continue 'matching' photographs of head callosities obtained on the flights using a computer-assisted system against those (2000+ individuals) in the existing identification catalogue. Obtain information on current and past distribution and, in due course, biological parameters such as age at first parturition and calving rate.

c) continue databasing existing information on sightings, linked to animals already identified.

4. APPROACH

As in previous years one flight was to be undertaken from a high wing, single engine aircraft based on Albany WA, over *ca* 39 hours, for four-five flying days. When whales are sighted, a count is made and individuals are circled for photography, and the GPS sighting position is recorded, as latitude and longitude. For individual identification, clear images of the head callosity pattern and/or other identifying characteristics are required.

As in previous years, direct counts were to be obtained of animals observed within the search area. Photographs were to be obtained of as many animals as possible but with emphasis on cows with calves. The search area includes virtually all the area to which 'western' right whales resort in winter/spring, close to the coast, in particular for females to give birth, generally at three-year intervals.

As in previous years, the maximum count on the flight is to be compared with results since 1993 to obtain estimates of a) population trend and b) current population size

Population size is currently obtained using a simple model based on the numbers of cow/calf pairs sighted. Given the relative paucity of animals that visit the remainder of the southern Australian coast, the 'western' population recorded between C Leeuwin and Ceduna is considered to represent the majority of the 'Australian' population.

Photographs from the flights are to be added to the 'WA' catalogue for computer-assisted 'matching' with those already available from WA and elsewhere, including the Antarctic. Sightings information is to be added to the existing sightings database which relates detailed sightings information to individuals already identified photographically.

5. RESULTS

Aerial Survey:

In six days, 2-6 September 2015, over 10 'flying' legs, during 39.71 flying hrs, there were sightings of 896 whales including 172 calves of the year. Flying was delayed by one day on leg 2, at Esperance, because of a waterlogged airstrip at Caiguna, WA. For comparison with previous years, and given that nine legs were, as usual, flown twice ('outwards' and 'inwards'), the comparable count (combining the maximum for each leg) was 462 including 97 calves. The counts were considerably lower than expected, indeed the lowest since 2007.

Trend analysis of the annual data since 1993, and an estimate of current population size, will be included in the Final Report due on 30 March 2016.

Photography:

From 3679 images obtained on the flight, 377 have been selected for 'matching' with those (some 5000 images) already available in the catalogue.

Databasing:

For 2015, 126 data sightings sheets have been added to the sightings database, currently totalling 3670 sheets.

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